



CALIFORNIA-GERMANY

BILATERAL ENERGY CONFERENCE



2017

OCTOBER 19-20 | SACRAMENTO, CALIFORNIA

ORGANIZED BY:



Federal Ministry
for Economic Affairs
and Energy

SUPPORTED BY:





Dear Attendee,

Welcome to Sacramento, capital of the sixth-largest economy in the world, affectionately known as the City of Trees.

An interest in energy resiliency has brought California and Germany together to examine options for increasing energy system resiliency while mitigating greenhouse gas emissions from the energy sector.

It has become imperative that energy systems need to become more resilient in light of the recent devastating storms endured in the southern United States and the Caribbean, and the recent earthquake to hit Mexico.

In California's economy, energy accounts for more than 90 percent of all carbon emissions. California accounts for only 1 percent of global emissions. It needs to partner with other leaders, such as Germany, to set an example of how a large and stable economy can reduce emissions while continuing to grow gross domestic product.

Senate Bill 32 has established a target in California for reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030. In order to meet that target, California has set a goal of getting 50 percent of its electricity supply from renewable resources. It is doubling energy efficiency for electricity and natural gas users and increasing the electrification of its transportation sector. California's electricity sector has already made great strides by getting to 24 percent below 1990 emissions.

This conference will highlight key policy drivers for California and Germany and will indicate what can be accomplished when international entities come together with common goals.

Sincerely,

A handwritten signature in black ink that reads "Robert B. Weisenmiller".

Robert B. Weisenmiller

Chair of the California Energy Commission

If you have questions during one of our panels, please email **CAGermany@energy.ca.gov** with your question, and include the name of the panel in your subject line.

Join the conversation on Twitter by using the hashtag **#CAGermany**. Follow us on Twitter: **@CalEnergy @BMWi_Bund**



Dear Attendees of the 1st California-Germany Bilateral Energy Conference,

California has always been a pioneer in innovation: The Golden Gate Bridge is just one of many impressive examples. Another one is the use of catalytic converters in cars. So it comes as no surprise that California is one of the most progressive regions in the world in terms of environmental protection and goals for renewable energy.

Germany is in the middle of a historic energy transition, the "Energiewende" – a comprehensive transformation of our energy supply towards a bigger share of renewable energy sources and increased energy efficiency.

In spite of the geographical distance between Sacramento and Berlin, we have a lot in common: High ambitions, with accompanying challenges, for example in the regulatory field, but also economic opportunities. We will therefore need a lot of innovative ideas helping to create efficient energy systems and convince other industrial regions to join the fight against climate change.

For our energy policies to be successful and sustainable, they have to focus on energy security, environmental compatibility and economic viability. Combining these three goals is what the German energy transition is all about. We are proud to be spearheading a forward-looking energy policy that is committed to these goals. The implementation of the policies rests on three main pillars: "Energy Efficiency First", which means that we are looking at reducing energy consumption as much as we can. Secondly, the remaining energy demand shall be generated more and more with carbon dioxide neutral renewable energy. Thirdly, renewable power is used efficiently for heat, transport and industry.

Today, no less than one third of our electricity comes from renewable sources, and we are using energy ever more efficiently. Germany was able to cut its greenhouse gas emissions by 27 percent by 2014 compared to 1990 levels.

Germany remains committed to its pledge to reduce carbon dioxide emissions by 40 percent by 2020 compared to 1990 levels, and is making sure that this can be attained via solutions that are both economically and socially acceptable.

By undertaking an ambitious package of measures, we pull the different strands of the energy transition together, define clear objectives and targets, guarantee market-based prices, and thus allow stakeholders to plan ahead.

The energy transition is not just a national project but it represents a global trend. Installed capacity based on renewables, and investment in the same has been increasing for many years around the world. We are actively seeking to join forces with our international partners in order to exchange best practices and provide policy certainty for investments. This conference is a perfect opportunity to exchange views and discuss possible technological and regulatory solutions.

We are convinced that companies on both sides of the Atlantic can benefit tremendously from the changing global energy landscape. This is why we should work together to promote open, transparent and competitive energy markets.

And we should not forget: Climate does not stop at borders. We are in this together. I wish you a successful conference and fruitful discussions!

Sincerely yours,

Rainer Baake

State Secretary in the Federal Ministry for Economic Affairs and Energy, Germany

Day 1: Thursday, October 19

12:30 p.m. Registration

Master of Ceremony: *Drew Bohan*, Executive Director,
California Energy Commission

1:30 p.m. California and Germany as Forerunners in the Global Energy Transition

Welcome and Opening Remarks
Robert B. Weisenmiller, Chair, California Energy Commission
Martin Schöpe, Head of Division, International Cooperation on Energy,
German Federal Ministry for Economic Affairs and Energy (BMWi)

1:50 p.m. Presentation and Q&A: Long-Term Planning for the Power Sector

Amory Lovins, CEO, Rocky Mountain Institute
Katharina Grave, Principle Issues of Electricity Division, German Federal
Ministry for Economic Affairs and Energy (BMWi)

3:00 p.m. Coffee Break

3:30 p.m. The Energy Transition Here and There: Visionary Voices

Stephen Berberich, President and Chief Executive Officer,
California Independent System Operator
Hal Harvey, CEO, Energy Innovation
Peter Hoffmann, Senior Manager System Operations, TenneT TSO
Felix Matthes, Research Coordinator,
Energy and Climate Policy, Öko-Institut
Simon Müller, Head of Unit System Integration of Renewables,
International Energy Agency
Professor Mario Ragwitz, Deputy Head of Competence Center Energy Policy
and Energy Markets, Fraunhofer Institute for Systems and Innovation
Research ISI
Nancy Sutley, Chief Sustainability Officer,
Los Angeles Department of Water and Power
Moderator: *Antonella Battaglini*, Founder and CEO,
Renewables Grid Initiative

5:00 p.m. Voice from Asia: China's 2050 Vision

Professor Wang Zhongying, Director, China National Renewable Energy Centre

5:30 p.m. Networking Reception – Cafeteria 15L

1116 15th Street, Sacramento, CA 95814

Day 2: Friday, October 20

7:30 a.m. Breakfast

8:30 a.m. Welcome Back Remarks

Janea A. Scott, Commissioner, California Energy Commission
Martin Schöpe, Head of Division, International Cooperation on Energy,
 German Federal Ministry for Economic Affairs and Energy (BMWi)

8:50 a.m. Panel 1: Vision Meets Reality: Integrating Renewable Power into the Transportation Sector and the Heating Sector

Hanno Butsch, Head of International Cooperation, (German) National Organisation Hydrogen and Fuel Cell Technology
Christoph Jugel, Director of Energy Systems, Deutsche Energie-Agentur (dena)
Ronald O. Nichols, President, Southern California Edison
Niklas Schirmer, Head of Energy, ubitricity
Dietrich Schmidt, Head of Power-Heat-Systems Department, Fraunhofer Institute for Wind Energy and Energy System Technology
Daniel Witt, Senior Manager, Business Development and Policy, Tesla
 Moderator: *Professor Daniel Sperling*, Director, Institute of Transportation Studies, University of California, Davis

10:30 a.m. Break

11:00 a.m. Panel 2: Vision Meets Reality: Consumers, Demand and the Network

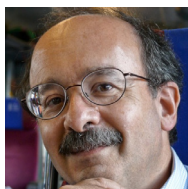
Jan Aengenvoort, Head of Communication & Market Research, Next Kraftwerke
Jesse Bryson, Vice President and Head of Global Market Development, Advanced Microgrid Solutions
Jay Dickenson, Chief Consultant, California Senate Energy, Utilities and Communications Committee
René Mono, Managing Director, 100 % Renewable Foundation
 Moderator: *Andrew McAllister*, Commissioner, California Energy Commission

12:15 p.m. Closing Remarks

Robert B. Weisenmiller, Chair, California Energy Commission
Martin Schöpe, Head of Division, International Cooperation on Energy,
 German Federal Ministry for Economic Affairs and Energy (BMWi)

12:30 p.m. Finger Food & Networking

1:30 p.m. Event Ends



Amory Lovins

CEO, Rocky Mountain Institute

Lovins is Cofounder and Chief Scientist of the Rocky Mountain Institute. He has served as an energy advisor to major firms and governments in more than 65 countries for more than 40 years. He is the author of 31 books and 600 papers. Lovins is an integrative designer of superefficient buildings, factories, and vehicles. Time named Lovins as one of the world's 100 most influential people, while Foreign Policy named him one of the 100 top global thinkers.



Andrew McAllister

Commissioner, California Energy Commission

McAllister was appointed to the Energy Commission by Governor Edmund G. Brown Jr. in May 2012, and reappointed in January 2017. He worked on clean energy deployment and policy for 25 years, beginning in the early 1990s in project engineering and development, evolving into program design and implementation, and then moving into the policy arena.



Antonella Battaglini

Founder and Chief Executive Officer, Renewables Grid Initiative (RGI)

Battaglini is Founder and Chief Executive Officer of the Renewables Grid Initiative (RGI). RGI was born in 2009, when nongovernmental organizations and transmission system operators from across Europe came together to promote transparent, environmentally sensitive grid development to enable the steady growth of renewable energy and the energy transition.



Christoph Jugel

Director of Energy Systems, Deutsche Energie-Agentur (dena)

Jugel is Director of Energy Systems at dena, which is the German Energy Agency, since 2016. He is responsible for projects on the further development of electricity grids, continuing convergence of all energy consumption sectors, digitalization of the energy sector, urban energy transition, and decarbonization of the energy system. He leads the dena study on the integrated energy transition. Before joining dena, he ran a consulting firm since 2008, giving strategic advance on the digital transformation of the energy industry. He has also held various positions in the Arvato Bertelsmann group of companies since 2002. He graduated in business administration from the WHU-Otto Beisheim Graduate School of Management and spent exchange semesters in the United States and Spain.



Dr. Daniel Sperling

Director, Institute of Transportation Studies, University of California, Davis (ITS-Davis)

Sperling is Distinguished Professor of Civil Engineering and Environmental Science and Policy and founding Director of the ITS-Davis. He holds the transportation seat on the California Air Resources Board and served as Chair of the Transportation Research Board of the National Academies in 2015 to 2016. He served twice as lead author for the Intergovernmental Panel on Climate Change (sharing the 2007 Nobel Peace Prize), has testified seven times to the U.S. Congress, and provided 40 keynote presentations in the past five years. He has authored or co-authored over 250 technical papers and 12 books, including *Two Billion Cars*. His next book is *Three Revolutions: Steering Automated, Electric and Shared Vehicles to a Better World*.



Daniel Witt

Senior Manager, Business Development and Policy, Tesla

Witt is the Senior Manager of Business Development and Policy for Tesla. He has been with the company for six years. Before that, he spent four years in the office of U.S. Senator Dianne Feinstein working on transportation legislation and municipal infrastructure and goods movement projects. In his current role, he works with legislators, industry partners and other decision makers to address state and local policy issues, as well as a myriad of business development projects, related to promoting electric vehicles, renewable infrastructure deployment, and energy storage.



Dietrich Schmidt

Head of Power-Heat-Systems Department, Fraunhofer Institute for Wind Energy and Energy System Technology

Schmidt is affiliated with the Fraunhofer Institute for Wind Energy and Energy System Technology (IWES). He works in the research and development division on energy economy and grid operation. He studied engineering thermodynamics and building services at the University of Kassel in Germany and continued his education at KTH Royal Institute of Technology, Stockholm, Sweden, where he earned a PhD in building physics/building technology.



Drew Bohan

Executive Director, California Energy Commission

Before joining the Energy Commission, Bohan served in a number of capacities in state government, including as Assistant Secretary for Policy for the California Environmental Protection Agency, Deputy Cabinet Secretary at the Governor's Office, Executive Policy Officer for the Ocean Protection Council, and Chief Counsel for the California Department of Conservation. Prior to joining state service, he worked as Executive Director of Santa Barbara Channelkeeper, Chief Counsel to the House of Delegates in the Republic of Palau, and litigation attorney at Heller Ehrman in San Francisco.



Dr. Felix Matthes

Research Coordinator, Energy and Climate Policy, Öko-Institut

Matthes graduated as an electrical engineer from Leipzig University of Technology in 1985 and received his doctoral degree in political science from Free University of Berlin in 1999. He has more than 25 years of professional experience in research and consultancy, concentrating on energy and climate change issues. He has published numerous studies and publications on German and international energy policy, as well as on environment and climate policy.



Hal Harvey

CEO, Energy Innovation

Harvey is the CEO of Energy Innovation, a San Francisco-based energy and environmental policy firm. Since 2012, Energy Innovation has delivered high-quality research and analysis to policymakers around the world and across a range of jurisdictions to help inform their energy policy decisions. Harvey was Founder and CEO of ClimateWorks Foundation, a network of foundations that promote policies to reduce the threat of climate change. From 2002 to 2008, he served as Environment Program Director at the William and Flora Hewlett Foundation. From 1991 to 2002, Harvey served as Founder and President of the Energy Foundation, a philanthropy supporting policy solutions that advance renewable energy and energy efficiency.



Hanno Butsch

Head of International Cooperation, (German) National Organisation Hydrogen and Fuel Cell Technology

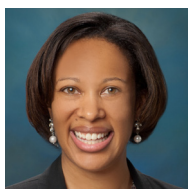
Butsch studied environmental planning with a focus on technological issues at the Umwelt Campus Birkenfeld (Trier University, Germany). He earned his PhD in material science in liaising with Freudenberg Fuel Cell Component Technologies KG from the Technical University of Darmstadt in 2012. He began his professional career at Freudenberg-NOK General Partnership where he managed the fuel cell laboratory in Plymouth, Mich. In June 2012, he joined the National Organisation Hydrogen and Fuel Cell Technology. He is responsible for international affairs including development of intergovernmental and industrial exchange.



Jan Aengenvoort

Head of Communications & Market Research, Next Kraftwerke

He heads the Communications & Market Research Department for Next Kraftwerke as its CCO. He provides information about the integration of renewable energy into existing grid structures and energy markets using Virtual Power Plants (VPPs) and short-term trading. He is an expert on the German VPP market and is looking to expand his knowledge of overseas energy markets. Since joining Next Kraftwerke in 2010, he has helped turn a small startup into one of Europe's largest Virtual Power Plants with more than 130 employees.



Janea A. Scott

Commissioner, California Energy Commission

Scott was appointed to the Energy Commission by Governor Edmund G. Brown Jr. in February 2013 and reappointed in January 2016. She is the Energy Commission's public member, and is the lead commissioner on transportation and Western regional planning. Scott also leads adoption of recommendations by the Energy Commission's Senate Bill 350 Barriers Study to expand access to the benefits of clean energy and transportation for low-income Californians, including those in disadvantaged communities as well as small businesses in disadvantaged communities.



Jay Dickenson

Chief Consultant, California Senate Energy, Utilities and Communications Committee

Dickenson is Chief Consultant to the Senate Committee on Energy, Utilities and Communications. Over the past 17 years, he has worked in a variety of capacities for both the legislative and administrative branches. His public sector experience has included analyzing the annual budgets of the state's environmental and energy agencies for the Legislative Analyst's Office and advising Assembly leadership on bills affecting natural resources, environmental protection, and renewable energy as a consultant to the Assembly Committee on Appropriations. Before joining the Senate, Dickenson served as Director of Governmental Affairs for the California Energy Commission. His professional experience also includes a stint in advertising and teaching English at Benito Juarez Autonomous University of Oaxaca, Mexico.



Jesse Bryson

Vice President and Head of Global Market Development, Advanced Microgrid Solutions

Bryson is responsible for identifying and developing new market opportunities for the company in both domestic and international markets. He also leads efforts to customize product offerings to ensure both utility and customer needs are met. Before joining the company, he held multiple roles at Southern California Edison (SCE), including overseeing the development of SCE's corporate strategy for distributed energy resources.



Katharina Grave

Principle Issues of Electricity Unit, German Federal Ministry for Economic Affairs and Energy (BMWi)

Grave works for the German Federal Ministry for Economic Affairs and Energy in the Principle Issues of Electricity unit. After studying energy economics and European politics in Cologne and Istanbul, she worked as a research associate in the power market unit at the Institute of Energy Economics in Cologne, Germany. She conducted and coordinated studies about transmission grid expansion, security of supply, demand side management potentials, and the impact of different storage facilities on the European electricity market.



Martin Schöpe

Head of Division, International Cooperation on Energy, German Federal Ministry for Economic Affairs and Energy (BMWi)

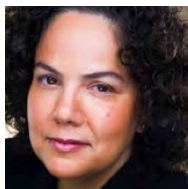
He has been working in the energy policy field since 2003. Until 2013, his focus was on international cooperation in the field of renewable energy for the Federal Environment Ministry. Since 2014, he has been with the Federal Ministry for Economic Affairs and Energy, where he continues working on international energy policy.



Mario Ragwitz

Professor, Deputy Head of Competence Center Energy Policy and Energy Markets, Fraunhofer Institute for Systems and Innovation Research ISI

He serves as deputy head of the department for energy policy and energy markets at the Fraunhofer-Institute for Systems and Innovation Research (ISI). His current work focuses on developing and evaluating policies for renewable energy technologies and modeling energy systems with renewable sources. He has coordinated more than 40 research projects on renewable energy policy development and authored more than 50 peer-reviewed scientific articles. He worked as a researcher at the Max Planck Institute for Physics of Complex Systems, and as a visiting researcher at the University of Texas at Austin and the Lawrence Berkeley National Laboratory.



Nancy Sutley

**Chief Sustainability Officer,
Los Angeles Department of Water and Power**

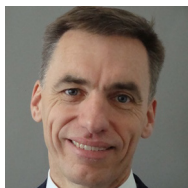
In July 2014, Sutley was named Chief Sustainability and Economic Development Officer of the Los Angeles Department of Water and Power (LADWP) where she oversees energy efficiency, water conservation, economic development, and electrification of the transportation network. Before joining LADWP, she served as Chair of the White House Council on Environmental Quality from January 2009 to February 2014.



Niklas Schirmer

Head of Energy, ubitricity

Schirmer heads ubitricity's energy market activities with responsibility for business strategy and product management of the company's B2B energy services. He is in charge of market operations of the ubitricity mobile metering and virtual power grid platform and is responsible for regulatory affairs. Before joining ubitricity in 2014, he worked for three years as a Senior Management Consultant at the Berlin-based Cleantech Advisory Apricum, with a focus on strategic growth projects along the value chains of the solar and storage industry.



Peter Hoffmann

Senior Manager System Operations, TenneT

Hoffmann started his business career in 1994 with the E.ON Group focusing on strategic development in Central and Eastern Europe. Beginning as project manager for the privatization process in Hungary, he worked as a board member for the West Bohemian distribution company ZCE in 2002 and director of sales & trading of E.ON Czech in 2004. He has lived two years in Hungary and four years in Czech Republic, where he built relationships with decision makers and developed an empathy for Central and Eastern Europe.



René Mono

Managing Director, 100% Renewable Foundation

Mono joined 100 Prozent Erneuerbar Stiftung in 2011 as its managing director and was appointed executive board member in 2015. In addition, he is a board member with Bündnis Bürgerenergie and Veolia Stiftung and a project consultant with the independent think tank Stiftung Neue Verantwortung. After graduating in communication science, he worked in public affairs at the German-Chilean Chamber of Commerce in Santiago de Chile, German-African Business Association in Hamburg and CNC AG in Munich. From 2004 until 2011, he worked for Ketchum Pleon in Berlin und Bruxelles, first as a communications consultant before becoming board member and manager of global energy-practice. He holds a PhD in communications and has published numerous articles, including on citizen participation in the German Energiewende.



Robert B. Weisenmiller

Chair, California Energy Commission

Weisenmiller was appointed as member and Chair to the Energy Commission in January 2011 by Governor Edmund G. Brown Jr. and re-appointed in January 2015. He fills the engineer/scientist position on the five-member Energy Commission where commissioners must come from and represent specific areas of expertise: engineering/science, environment, economics, law, and the public at large. He has more than 30 years of energy experience, including expertise in electricity and gas markets and California regulatory policies.



Ronald O. Nichols

President, Southern California Edison

Nichols is president of Southern California Edison (SCE). He is responsible for external affairs, compliance, power production and procurement, and other operations. He is a member of SCE's board of directors. Nichols has more than 35 years of experience in the electric and water utility industry. He has been a strategic and operational advisor to utilities, state and local government, power suppliers and the financial community on complex energy and utility matters throughout the United States, particularly in the West.



Simon Müller

Head of Unit System Integration of Renewables, International Energy Agency

Müller is responsible for International Energy Agency (IEA) analysis as part of the Grid Integration of Variable Renewables (GIVAR) program, which aims at identifying global best practices for integrating renewable energy into power grids and the wider energy system. He served as the analytical and managerial lead of the last GIVAR phase, a two-year project assessing the technical and economic implications of large scale wind and solar grid integration. Since joining the IEA in 2010, he has authored numerous publications on grid integration, market and policy design as well as renewable energy technologies.



Stephen Berberich

**President and Chief Executive Officer,
California Independent System Operator**

Berberich is President and Chief Executive Officer of the California Independent System Operator (ISO), which is one of the world's largest transmission organizations, managing the electric grid and wholesale power markets for 30 million Californians. Berberich, who has been with the ISO for 12 years, has navigated the organization through a series of major changes underway in the energy industry, including the transformation of the power grid to lower its reliance on fossil fuels.



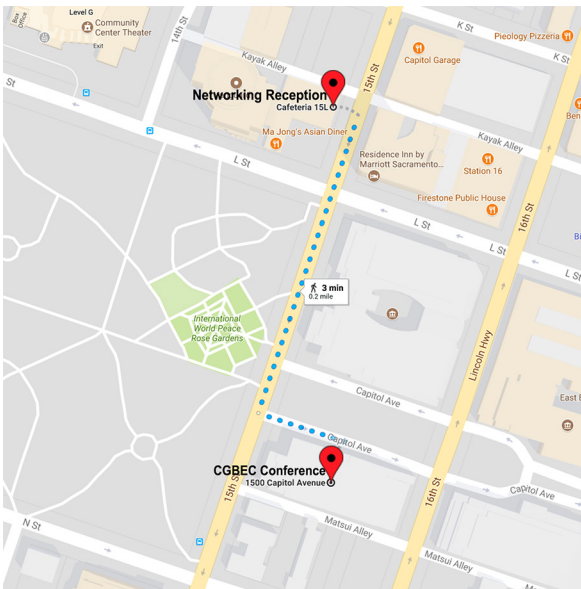
Wang Zhongying

Professor and Director, China National Renewable Energy Centre

He is the Director of the China National Renewable Energy Centre and Deputy Director General of the Energy Research Institute at the National Development and Reform Commission. He serves as Executive Director of the China Rural Energy Industry Association, China Energy Society, and China Biogas Society. He also is the Vice Secretary-General of the Rural Energy Committee of China Renewable Energy Society, the China Renewable Energy Association and Renewable Energy Industry Committee, and the Chinese Renewable Energy Industries Association.



DIRECTIONS



Reception:

Cafeteria 15L

1116 15th Street,
Sacramento, CA 95814

Conference:

**California Department of
Public Health (Auditorium)**

1500 Capitol Avenue,
Sacramento, CA 95814